CLAIMS

1. A micro-speaker including a yoke, a permanent magnet, a plate, a vibration plate with a first suspension integrated therewith, a voice coil, a frame and a protector, comprising:

a second suspension which is made of highly resilient material and installed between the plate and the vibration plate,

wherein the voice coil is attached to a lower surface of the second suspension, the vibration plate is attached to an upper surface of the second suspension, and an outer periphery of the second suspension is fixed to the frame.

2. The micro-speaker as claimed in claim 1, wherein the second suspension is a highly resilient and conductive leaf spring of which a portion protrudes outside of the frame to be connected to a signal-supplying portion, and a lead of the voice coil is connected to the second suspension.

3. The micro-speaker as claimed in claim 2, wherein the second suspension comprises two suspension sections of which shapes are symmetrical with each other, and the two suspension sections are not electrically connected to each other with a predetermined gap therebetween.

4. The micro-speaker as claimed in claim 3, wherein each of the suspension sections comprises:

a semicircular outer peripheral portion which extends from the electrode terminal portion protruding outside of the frame;

an inner peripheral portion which is spaced apart by a predetermined gap from and arranged perpendicularly to the outer peripheral portion and to which the voice coil and the vibration plate are attached;

damping diaphragms for performing functions of electrically connecting the outer and inner peripheral portions to each other and damping vertical vibration; and

a connection portion to which the lead of the voice coil is connected.

5. The micro-speaker as claimed in claim 4, wherein the suspension section is provided with two damping diaphragms, wherein a first damping diaphragm is integrally connected at a position on the outer peripheral portion adjacent to the electrode terminal portion to form a first outer damping support point, and at a position on the inner peripheral portion with a predetermined gap therebetween to form a first inner damping support point, and a second damping diaphragm is integrally connected at a position on the outer peripheral portion opposite to the electrode terminal portion to form a second outer damping support point, and at another position on the inner peripheral portion with a predetermined gap therebetween to form a second inner damping support point.

6. The micro-speaker as claimed in any one of claims 2 to 5, wherein the protruding portion of the second suspension is bent and fixed to the frame so that the connection of the protruding portion to the signal-supplying portion is made through a spring terminal.